



C09-EE-404

**3476**

**BOARD DIPLOMA EXAMINATION, (C-09)**

MARCH / APRIL - 2019

**DEEE - IV SEMESTER EXAMINATION**

**ELECTRICAL INSTALLATION & ESTIMATION**

Time : 3 Hours]

[Total Marks : 80

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**PART - A**

**3×10=30**

- Instructions :**
- (1) Answer *ALL* questions.
  - (2) Each question carries *THREE* marks.
  - (3) Answer should be brief and straight to the point.

- 1 Draw the wiring diagram of fluorescent lamp.
- 2 Draw the wiring layout for a cement factory.
- 3 Write the important materials used in installation of power loads.
- 4 What is the function of insulator in overhead transmission lines and write materials used for insulators.
- 5 State the different ratings of transformers used for plinth mounted substation.
- 6 State the materials required for erecting the 100 KVA, 11KV/400 volts distribution transformer.

- 7 Specify the value of earth resistance to be maintained for a given electrical installation :
  - (a) Large power station
  - (b) Major sub station
  - (c) Small sub station
- 8 State any two I.E. rules on industrial safety.
- 9 State the defects in commutator.
- 10 State the causes for failure of power transformer due to structural defects.

**PART - B**

**10×5=50**

**Instructions :**

- (1) Answer any **FIVE** questions.
- (2) Each question carries **TEN** marks.
- (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11 An irrigation pump set of 7.5 KW is to be installed at a distance of 20 m from a 3-phase, 415V distribution line.
  - (i) List the materials required for the service main with specifications.
  - (ii) Draw the wiring diagram from distribution pole to the motor pump set.
- 12 Write merits and demerits of open and concealed conduit wiring system in five aspects.

- 13 Draw the wiring diagram of a typical house wiring circuit incorporating main switch, energy meter, fuse cut-out and distribution board.
- 14 Estimate the materials required for erection of 3- $\theta$ , 5-wire distribution line of the length of 2 Km and the span between the two poles is 60 m over a 8m long PSCC poles.
- 15 Draw a neat sketch of suitable earthing with necessary dimensions for a domestic installation with air conditioner and prepare the quantity of materials.
- 16 The load particulars of a village are as given below :
- (a) Domestic load 200 No. each 300 W
  - (b) Rice mills, 3 No., each 10 H.P.
  - (c) Agricultural load, 10 No. each 7.5 H.P.
- Take diversity factor of the load as 1.5 and calculate the KVA rating of the distribution transformer needed in the village to feed the load and estimate the materials required.
- 17 (a) Write the importance of earth resistance in earthing. Write the factors affecting the earth resistance. Write the instrument used to measure the earth resistance.
- (b) State the important I.E. rules in electrical supply and distribution system.
- 18 (a) Describe the various causes of troubles and failures of core of power transformer.
- (b) What is the role of maintenance engineer ?